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EXAMINER	
LAVARIAS, ARNEL C	
ART UNIT	PAPER NUMBER
2872	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/663,819	MORITA, KAZUO	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/28/06,11/2/05*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,10 and 12* is/are allowed.

6)☒ Claim(s) *1-3 and 5-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/2/05 has been entered.

Response to Amendment

2. The amendments to the specification of the disclosure in the submission dated 11/2/05 are acknowledged and accepted.

3. The amendments to Claims 1, 3, 6-7 in the submission dated 11/2/05 are acknowledged and accepted.

4. The cancellation of Claims 11, 13-14 in the submission dated 11/2/05 is acknowledged and accepted. In view of these amendments, the rejections under 35 U.S.C. 112, 1st paragraph, in Section 8 of the Office Action dated 8/15/05 are respectfully withdrawn. In addition, the rejections under 35 U.S.C. 103(a) in Sections 13-14 of the Office Action dated 5/15/05 are respectfully withdrawn.

Response to Arguments

5. The Applicant argues that, with respect to newly amended Claim 1, as well as Claims 2-3, 5-9 which depend on Claim 1, the combined teachings of Tomioka and Morita et al. fail to teach or reasonably suggest a first reflective surface that deflects light paths from the objective optical system to a substantially horizontal direction, a second reflective surface that then deflects the light paths upward, and a third reflective surface that then deflects the light paths to a substantially horizontal direction, wherein the first through third reflective surfaces form a folded optical system and the pair of zoom optical systems is arranged within the folded optical system. After reviewing Tomioka and Morita et al., the Examiner agrees, and respectfully withdraws the rejections in Sections 10-12 of the Office Action dated 8/15/05.

6. Claims 1-3, 5-9 are now rejected as follows.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanzawa et al. (U.S. Patent No. 7085045).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Hanzawa et al. discloses a stereoscopic microscope that enables a plurality of observers, including a first observer and a second observer to simultaneously observe substantially the same microscopic image of an object (See Figures 1-2, 4-7), the stereoscopic microscope comprising a first observation device for use by the first observer (See for example 104 in Figures 1-2; 32 in Figures 5-7); a second observation device for use by a second observer (See for example 105 in Figures 1-2; 31, 71 in Figures 5-7); a stereoscopic microscope body that includes an objective optical system (See for example 101 in Figures 1-2; 1, 41 in Figures 5-7), a pair of zoom optical systems (See for example 3R, 3L, 43R, 43L in Figures 5-7); a first reflective surface (See for example 2, 42 in Figures 5-7) that deflects light paths from the objective optical system to a substantially horizontal direction, a second reflective surface that then deflects the light paths upward, and a third reflective surface that then deflects the light paths to a substantially horizontal direction (See for example 5L, 5R, 6L, 6R, 45R, 45L in Figures 5-7), wherein the first through third reflective surfaces form a folded optical system and the pair of zoom optical systems is arranged within the folded optical system; a first connector (See for example connector on 104 to microscope body 100 in Figures 1-2) that is positioned on the stereoscopic microscope body in the vicinity that the optical axis of the objective optical system intersects with the stereoscopic microscope body, the first connector for attaching the first observation device; and a second connector (See for

example connector on 105 allowing passage of light 108 in Figures 1-2) that is installed on the stereoscopic microscope body at a position that is the same level as, or above, the position that the first connector is installed on the stereoscopic microscopic body; wherein the first connector is located at a position on the stereoscopic body, in relation to the optical axis (See optical axis passing through objectives 101, 1, 41 in Figures 1-2, 5-7) of the objective optical system, that is closer to the objective optical system than is the position of the second connector; and the first and second connectors are arranged on opposite sides of the optical axis of the objective optical system as viewed in the direction of the horizontal optical path of the folded optical system (See Figures 1-2, 5-7). Hanzawa et al. further discloses the second observation device being attached to the stereomicroscope body at the second connector and has a rotation axis (See for example rotation axis at 109 in Figures 1-2) around which the second observation device can be rotated, and the angle between the rotation axis and the optical axis of the observation optical system, in the region from the observed object to the microscope body, is 15 degrees or less (See Figures 1-2, 5-7, wherein the rotation axis and the optical axis of the observation optical system are parallel to teach other, and thus have an angle of 0 degrees between each other); the folded optical system further comprises a first leading optical system (See for example 11R, 11L, 50R, 50L in Figures 5-7) for dividing the two light fluxes that transmit through the pair of zoom optical systems into four light fluxes, the first leading optical system leading these four light fluxes toward the second connector, the second observation device has an ocular system that includes two eyepiece lenses (See for example col. 2, lines 45-67); of the four light fluxes, two light fluxes are led by

the ocular optical system to the eyepiece lenses; and by rotating the second observation device around the rotation axis, the two light fluxes that enter the ocular optical system may be switched to the other two of the four light fluxes (See 4, line 8-col. 5, line 3); the first connector has a contact surface that contacts the first observation device for attaching the first observation device to the microscope body, the contact surface having its surface normal inclined toward the first observer (See for example contact surface on 104 in Figures 1-2); the second connector is positioned on the microscope body surface in a horizontal position from the first connector in a direction away from the first observer (See for example position of 105 relative to 104 in Figures 1-2); and the folded optical system further comprises a second leading optical system (See for example various reflectors in Figure 6) that includes a plurality of reflecting surfaces and which four light fluxes from the light flux that transmits through the objective optical system, the second leading optical system leading these four light fluxes toward the second connector, the second observation device has an ocular system that includes two eyepiece lenses (See for example col. 2, lines 45-67); of the four light fluxes, two light fluxes are led by the ocular optical system to the eyepiece lenses; by rotating the second observation device around the rotation axis, the two light fluxes that enter the ocular optical system may be switched to the other two of the four light fluxes (See 4, line 8-col. 5, line 3), wherein each of the four light fluxes is reflected an even number of times by the plurality of reflective surfaces (See for example various reflectors in Figure 6, wherein each of the four light fluxes suffers either 10 or 20 reflections to reach the second connector near 71 in Figure 6).

9. Claims 1-3, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka (U.S. Patent No. 5668661), of record, in view of Nakamura (U.S. Patent No. 6473229).

Tomioka discloses a stereoscopic microscope that enables a plurality of observers, including a first observer and a second observer to simultaneously observe substantially the same microscopic image of an object (See Figures 1-2, 5, 13, 17-18, 21), the stereoscopic microscope comprising a first observation device for use by the first observer (See for example 70a in Figure 13); a second observation device for use by a second observer (See for example 70b in Figure 13); a stereoscopic microscope body that includes an objective optical system and a pair of zoom optical systems (See for example 1, 10a, 10b, 10c, 10d, 40a, 70a, 70b in Figure 13); a first reflective surface (See for example 78a, 73c in Figure 13) that deflects light paths from the objective optical system to a substantially horizontal direction, a second reflective surface that then deflects the light paths downward (See for example first prism reflector to the right after 78; first prism reflector to the left after 73c in Figure 13), and a third reflective surface that then deflects the light paths to a substantially horizontal direction (See for example prism reflector after 71a, 71b, 71c, 71d in Figure 13), wherein the first through third reflective surfaces form a folded optical system and the pair of zoom optical systems is arranged prior to the folded optical system (See 10a, 10b, 10c, 10d in Figure 13); a first connector (See for example microscope body portions enclosing space 82a) that is positioned on the stereoscopic microscope body in the vicinity that the optical axis of the objective optical system intersects with the stereoscopic microscope body, the first connector for attaching

the first observation device; and a second connector (See for example microscope body portion enclosing space 82b in Figure 13) that is installed on the stereoscopic microscope body at a position that is the same level as, or above, the position that the first connector is installed on the stereoscopic microscopic body; wherein the first connector is located at a position on the stereoscopic body, in relation to the optical axis of the objective optical system, that is closer to the objective optical system than is the position of the second connector, and the first and second connectors are arranged on opposite sides of the optical axis of the objective optical system as viewed in the direction of the horizontal optical path of the folded optical system (See optical axis 85 in Figure 13, wherein portions of 82a and 82b appear on opposite sides of axis 85 when viewing the stereomicroscope directly as shown in Figure 13). Tomioka additionally discloses the second observation device being attached to the stereomicroscope body at the second connector and has a rotation axis around which the second observation device can be rotated, and the angle between the rotation axis of the observation optical system, in the region from the observed object to the microscope body, is 15 degrees or less (See 2 in Figure 13; the rotation axis of the second observation system is collinear with the optical axis of the objective optical system); the folded optical system further comprises a first leading optical system for dividing the two light fluxes that transmit through the pair of zoom optical systems into four light fluxes, the first leading optical system leading these four light fluxes toward the second connector (See for example 10a, 10b, 10c, 10d in Figure 13), the second observation device has an ocular system that includes two eyepiece lenses (See for example 72c, 72d in Figure 13); of the four light fluxes, two

light fluxes are led by the ocular optical system to the eyepiece lenses; and by rotating the second observation device around the rotation axis, the two light fluxes that enter the ocular optical system may be switched to the other two of the four light fluxes (See col. 11, line 21-col. 13, line 65); the first connector has a contact surface that contacts the first observation device for attaching the first observation device to the microscope body, the contact surface having its surface normal inclined toward the first observer (See for example the vertical surface of the microscope body portion enclosing space 82b which contacts 81a in Figure 13); the second connector is positioned on the microscope body surface in a horizontal position from the first connector in a direction away from the first observer (See for example left side overhang of the microscope body portions enclosing space 82b, which contacts 81b in Figure 13); the folded optical system further comprising a second leading optical system that includes a plurality of reflecting surfaces and which makes four light fluxes from the light flux that transmits through the objective optical system, the second leading optical system leading these four light fluxes toward the second connector (See for example 10a, 10b, 10c, 10d, 78, 73c, various optics in 70a, various optics in 70b in Figure 13); the second observation device having an ocular optical system that includes two eyepiece lenses (See for example 72c, 72d in Figure 13); each of the four light fluxes is reflected an even number of times by the plurality of reflecting surfaces (Each of the four light fluxes appears to be reflected 8 times en route to each of the eyepiece lenses). Tomioka discloses the invention as set forth above, except for the second reflective surface deflecting light upwards and the pair of zoom systems being arranged within the folded optical system. However, Nakamura teaches a

conventional stereomicroscope (See for example Figures 1-3), wherein the stereomicroscope includes a first reflective surface (See for example P1 in Figure 3) that deflects light paths from the objective optical system (See for example 21 in Figure 3) to a substantially horizontal direction, a second reflective surface (See for example B2 in Figure 3, which splits light in three directions) that then deflects the light paths upward, and a third reflective surface (See for example P2 in Figure 3) that then deflects the light paths to a substantially horizontal direction, wherein the first through third reflective surfaces form a folded optical system and the pair of zoom optical systems (See for example 22 in Figure 3) is arranged within the folded optical system. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the microscope of Tomioka, further have the second reflective surface deflecting light upwards and the pair of zoom systems being arranged within the folded optical system, as taught by Nakamura, for the purpose of simplifying the optical design of the stereomicroscope, as well as make the stereomicroscope more compact by reducing the vertical size of the stereomicroscope.

10. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka in view of Nakamura as applied to Claims 1-2 above, and further in view of Fujiwara (U.S. Patent No. 4798451), of record.

Tomioka in view of Nakamura discloses the invention as set forth above in Claims 1-2, except for the second observation device including a rotatable part having a rotation axis, the angle between the rotation axis and the optical axis of the objective optical system in a region between the observed object and the microscope body is in a range of

35-55 degrees, the second observation device being constructed so that two of the four light fluxes enter within the rotatable part and the light fluxes that enter within the rotatable part are selected by rotation of the rotatable part around the rotation axis. However, Fujiwara teaches a binocular tube for a conventional microscope system (See for example Figures 1-9), wherein the ocular tube units (See 28 in Figure 8) are rotatable about a first axis (This axis would be denoted by the optical axis of the light traversing the connector between 27 and 28 near the region denoted 27 in Figures 6, 8), and the movable tube unit connecting to the ocular tube units is rotatable about a second axis (This axis is denoted by 'O' in Figure 6). The axis formed by the main imaging lenses (i.e. the objective lens) is denoted by the light ray traversing through 21 in Figures 6, 8. It is noted that the angle of rotation about 'O' is variable, and that, although not specified, one of ordinary skill would have been able to restrict the angular movement about 'O' to any particular range, such that the angle formed between the axis formed by the main imaging lenses and the axis formed by the rotation of the ocular tube units may lie in any particular angular range, such as the recited 35-55 degrees. In doing so, the pair of light fluxes selected by the rotation of the second observation device would, in any case, similarly be selected to pass through the rotatable part of the second observation device and traverse toward the ocular optical system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second observation device of the microscope of Tomioka in view of Nakamura, include a rotatable part having a rotation axis, the angle between the rotation axis and the optical axis of the objective optical system in a region between the observed object and the

microscope body is in a range of 35-55 degrees, the second observation device being constructed so that two of the four light fluxes enter within the rotatable part and the light fluxes that enter within the rotatable part are selected by rotation of the rotatable part around the rotation axis, as taught by Fujiwara, to provide easier user access to the ocular optical system during viewing.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka in view of Nakamura as applied to Claims 1-3 above, and further in view of Morita et al. (U.S. Patent No. 6333813), of record, and Taira (U.S. Patent No. 4412727), of record.

Tomioka in view of Nakamura discloses the invention as set forth above in Claims 1-3. Tomioka additionally discloses the ocular optical system in an ocular tube including a single image rotator, a pair of eyepiece optical systems which include the eyepiece lenses (See 81b, 72c, 72d; deflecting element in 81b near 72c, 72d in Figure 13). However, Tomioka in view of Nakamura lacks a pair of relay optical systems, a pair of image formation optical systems, the second observation device including an intermediate tube which houses the pair of relay optical systems and the single image rotator, the intermediate tube connecting to the second connector at one end and rotatably connected to the ocular tube at the other end; the two light fluxes passing through the pair of relay optical systems housed by the intermediate tube transmitting through the image rotator; and the image rotator rotating by ½ the amount of rotation of the ocular tube. However, the use of such housings and optical elements are well known and conventional in microscopic optical devices, including both non-stereoscopic and stereoscopic microscope devices. For example, Morita et al. teaches a conventional stereoscopic

microscope (See for example Figure 3), the microscope including conventional housings and optics, such as an intermediate tube housing a pair of relay optical systems (See for example 22, 18, housing enclosing 21, 22 in Figure 3), each relay optical system having an exit axis that is substantially parallel to the exit axis of the other relay optical system, the ocular tube including a pair of image formation optical systems (See for example lenses near 24 in Figure 3), the intermediate optical tube having a connecting portion that may be connected to the microscope body at one end (See 17, region near 19 in Figure 3) and is connected to the ocular tube at the other end; and two light fluxes, instead of a single light flux, passing through the pair of relay optical systems housed in the intermediate tube transmitting through the image rotator (See for example 20 in Figure 3). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the microscope of Tomioka in view of Nakamura, include a pair of relay optical systems, a pair of image formation optical systems, the second observation device including an intermediate tube which houses the pair of relay optical systems and the single image rotator, the intermediate tube connecting to the second connector at one end and rotatably connected to the ocular tube at the other end; and the two light fluxes passing through the pair of relay optical systems housed by the intermediate tube transmitting through the image rotator, as taught by Morita et al., for the purpose of protecting the various optical components while allowing for efficient light routing for simultaneous stereo viewing of images during viewing. The combined teachings of Tomioka, Nakamura, and Morita et al. lack the image rotator rotating by ½ the amount of rotation of the ocular tube. However, Taira teaches an observation device

that is used by attaching it to the body of a microscope, the observation device comprising an image rotator (See 15 in Figure 2); an ocular tube that is rotatable and houses a pair of eyepiece optical systems (See 25, 24a, 24b in Figure 2), wherein the image rotator is made to rotate by ½ the amount of the rotation of the ocular tube (See col. 2, line 4-col. 3, line 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the microscope of Tomioka in view of Nakamura, and further in view of Morita et al., further have the image rotator rotate by ½ the amount of rotation of the ocular tube, as taught by Taira, for the purpose of providing a good, erect observation image over a variable tilt angle without the use of bulky, large-sized reflecting mirrors.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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2/15/07

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